PERMIT TO CONSTRUCT EVALUATION
Low-NO_x Boiler, R1146,
New Construction, Replacement

Applicant's Name: M.C. Gill Corp.

Company ID No.: 13011

Mailing Address: 4056 Easy Street, El Monte, CA 91731

Equipment Address: 4056 Easy Street, El Monte, CA 91731

EQUIPMENT DESCRIPTION:

Application no. 537903 (Title V De Minimus Significant Permit Revision):

Application no. 537850 (New Construction, Replacement of Non-Low NOx Boiler (D29)):

Equipment	ID No.	Connected To	Source Type/ Monitoring Unit	Emissions	Conditions
Process 1: COATING OPERATION					
BOILER, NATURAL GAS, CLAYTON, MODEL SEG304-2-FMB, WATERTUBE, WITH LOW NOX BURNER, 11.815 MMBTU/HR WITH A/N 537850 BURNER, NATURAL GAS, CLAYTON, MODEL UH-3183, WITH LOW-NOX BURNER, 11.815 MMBTU/HR	**D60**			**CO:** 400 PPMV NATURAL GAS (5) [**RULE 1146,11-17-2000:** Rule 1146, 9-5-2008**];** **CO:** 2000 PPMV NATURAL GAS (5A) [**RULE 407, 4-2-1982];** **NOX:** 9 PPMV NATURAL GAS (5) [**RULE 1146,11-17-2000,** *RULE 1146, 9-5-2008]***;** **PM:** 0.1 GRAINS/SCF NATURAL GAS (5) [**RULE 409, 8-7-1981**]	D28.1, D29.1, D328.1, D328.2, E71.3

HISTORY:

Application no. 537850 was submitted by M.C. Gill Corp. to the District on May 11, 2012 for a new construction of a steam generation boiler with a low-NOx burner that is expected to comply with the Rule 1146 NOx emission limit of 9 ppm at 3% 0_2. This boiler (D60) will replace boiler (D29) under PO #G10350 (A/N 511415), which has a permit condition limiting the natural gas fuel usage to 90,000 therms per year, or less, to comply with Rule 1146(c)(4). According to the applicant, the fuel usage exceeded 90,000 therms in December 2011. This application was subsequently submitted to comply with Rule 1146(e)(4). And, the facility will have until June 30, 2013, per (e)(4)(B), to comply with paragraph Rule 1146(c)(1).

A/N	Previous		Equipment	Device No.
	A/N	Permit No.		
537850	511415	G10350	Boiler, 11.815 mmBTU/hr, low-NO_x	D60
537903	n/a	n/a	Title V permit revision	n/a

The facility is in the Title V program. A/N 537903 was submitted for a de minimus significant Title V permit revision. The Title V renewal permit was issued on October 13, 2010. This will be the third revision to the renewed Title V permit.

According to the compliance data base, this company was issued one notice to comply (NC #E00188) in November 2010. However, they came into compliance shortly thereafter. No Notices of Violation (NOV) were issued to the facility, nor complaints filed against the facility, in the past two years.

PROCESS DESCRIPTION:

This company manufactures Nomex honeycomb, which is used as a core material for composite panels. These panels are used for flooring, dividers and sidewalls in commercial and military aircraft. The honeycomb materials are also sold to airframe manufacturers. The structural composites use a phenolic resin-based structural foam called Gillfoam, which is a blown cellular gas-filled polymeric thermosetting foam based on phenolic resin, and formed into rigid structural shapes. The manufacturing of Gillfoam involves a resin dip process and can include the utilization of woven fiberglass that is impregnated with resin in a vertical treater.

This natural gas-fired boiler will be one of three boilers to be used to generate steam for the manufacturing operations. The facility will be required to conduct source tests on this new boiler prior to the issuance of the permit to operate to demonstrate it can meet the maximum 9 ppmv NOx emissions level under Rule 1146. The normal operating schedule is 18 hours/day, 7 days/week, and 52 weeks/year. The maximum operating schedule is 24 hrs/day, 7 days/week, and 52 wks/yr;

EMISSION CALCULATIONS:

Emissions from the operation of this boiler (D60) were calculated using the emission factors provided by the applicant. See the attached spreadsheet (Attachment 1). The emissions for the replaced boiler were based on the emissions calculated under the previous permit (A/N 511415). As explained in the attached memo dated December 22, 2009, the emissions from the previous permit had been updated to reflect the 30 ppm NO_x concentration, for maximum NO_x emissions of 11 lbs/day. This NO_x concentration level had been confirmed through source tests. See attached emission calculation (Attachment 2), AEIS and NSR sheets. Both emissions are shown below for comparison.

A/N	Boiler rating (mmBTU/hr)	NO_x Emissions		CO Emissions		PM_{10} Emissions		ROG Emissions	
		(lb/hr)	(lb/day)	(lb/hr)	(lb/day)	(lb/hr)	(lb/day)	(lb/hr)	(lb/day)
537950	11.815	0.135	3.24	1.125	27.01	0.086	2.05	0.062	1.49
511415	12.495	0.457	10.97	0.918	22.04	0.089	2.14	0.083	1.99
difference		-0.322	-7.73	+0.207	+4.97	-0.003	-0.09	-0.021	-0.50

RULES AND REGULATIONS:

RULE 212: SIGNIFICANT PROJECT PUBLIC NOTIFICATION

A public notice is not required because there is no school within 1000 feet of the company, no increase in criteria emissions above the levels in Rule 212(g) from the equipment or facility, and no increase in MICR.

RULE 401: VISIBLE EMISSIONS

Visible emissions from the operation of this equipment are not expected. No complaints resulting from visible emissions for any of their current boilers have been filed against this company. Also, no NC or NOV has been issued for visible emissions.

RULE 402: NUISANCE

The operation of this equipment is expected to comply with this rule. Several complaints resulting from odors have been filed against this company. However, no NC or NOV has been issued for nuisance. Operation of this natural gas-fired boiler is not expected to result in any odors.

RULE 1146: EMISSIONS OF NOX FROM COMMERCIAL BOILERS

The new boiler has a low-NO_x burner that is rated at 11.815 mmBtu/hr (Group III boiler). The facility will be required to conduct source tests prior to issuance of a permit to operate in order to demonstrate that the burner in this boiler can achieve a maximum NOx emission concentration of 9 ppmv @ 3% O_2 (0.011 lb $NO_x/10^6$ BTU) under Rule 1146(c)(1). CO emissions will be less than 400 ppm.

The boiler that is being replaced (D29) was limited to a natural gas usage of no more than 90,000 therms per year. This made that boiler exempt from the future NO_x emission compliance levels under Rule 1146(c)(1) and (2). This boiler will be replaced because the applicant said the 90,000 therms was exceeded in December 2011. According to Rule 1146(e)(4)(A), the facility was required to file this application for permits to construct and operate this proposed boiler. Pursuant to (e)(4)(B), the facility will have 18 months after exceeding 90,000 therms to demonstrate compliance with paragraphs (c)(1).

REGULATION XIII:

This project will be a functionally identical replacement since the burner on the new boiler (D60) is low-NO_x and has a lower BTU rating than the one being replaced.

BACT: There will be no net increase in NO_x, PM_{10} or ROG emissions as a result of the burner/boiler replacement and BACT is not triggered. However, there is an increase in CO over 1 lb/day since the new boiler CO emission concentration is higher than the default CO emission factor for natural gas combustion from boilers. There is no additional BACT for CO from a natural gas fired, watertube boiler. Compliance is expected.

Offsets: There will be no increase in NO_x, PM_{10} and ROG emissions. But, there will be an increase is of 4.97 lbs of CO per day. CO emission offsets will not be required since this is an attainment area for CO. Compliance is expected.

Modeling: There will be no increase of NO_x, PM_{10} or ROG emissions from this project. The maximum CO emission increase will be much below the maximum allowable CO emissions for combustion sources (Table A-1). However, for NO_x and PM_{10} this project will be exempt from modeling requirements due to the replacement exemption [Rule 1304(a)(1)].

RULE 1401: MAXIMUM INDIVIDUAL CANCER RISK ASSESSMENT

There will be no increase of health risk as a result of this boiler replacement. The new boiler (D60) has a lower heat input than the one being replaced (D29). This is a functionally identical replacement that is exempt from this rule under 1401 (g)(1)(C).

REG XXX: TITLE V PERMITS

This facility is not in the RECLAIM program. The proposed project is considered as a "de minimis significant permit revision" to the Title V permit for this facility.

Rule 3000(b)(6) defines a "de minimis significant permit revision" as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAPs) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

Criteria Pollutant Emission Thresholds

Air Contaminant	Daily Maximum (lbs/day)
HAP	30
VOC	30
NO_x	40
PM_{10}	30
SO_x	60
CO	220

To determine if a project is considered as a "de minimis significant permit revision" for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This proposed project is the 3rd permit revision to the Title V renewal permit issued to this facility on October 13, 2010. The table on the following page summarizes the cumulative emission increases resulting from this permit revision:

Title V Permit Revisions Summary

		HAP	VOC	NO_x	PM_{10}	SO_x	CO
1st Revision	Install new curing oven (D53), and vent to new RTO #9 (C55) – P/C (A/N 527418)	0	0	0	0	0	0
	Install new curing oven (D54) , and vent to new RTO #9 (C55) – P/C (A/N 527419)	0	0	0	0	0	0
	Install new RTO #9 (C55), to vent dip coat impregnating room #1 (D8), curing ovens (D53 and D54) - P/C (A/N 527420)	0	0	3	1	0	3
	Modification to dip coat impregnating room #1 (D8) to vent it to new RTO #9 (C55) - P/C (A/N 527421)	0	0	0	0	0	0
	Modification to RTO #7 (C48) to remove venting of dip coat impregnating room #1 (D8) - P/C (A/N 527422)	0	0	0	0	0	0
2nd Revision	Installation and operation of dip coat impregnating and drying equipment , prepregger #3 (D56-D57) and vented to existing RTO #6 (C47) –P/C (A/N 524462)	0	0	0	0	0	0
	Modification of existing RTO #6 (C47) to vent prepregger #3 (D56-D57) –P/C (A/N 524463)	0	0	0	0	0	0
3rd Revision	New construction of boiler with 11.815 mmBTU/hr low-NOx burner (D60) to replace boiler (D29) (A/N 537850)	0	0	-8	0	0	5
	Cumulative Total	0	0	-5	1	0	8
	Maximum Daily	30	30	40	30	60	220

CONCLUSIONS/RECOMMENDATIONS:

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant permit revision", it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to the facility (Section H).